Station Groups for Execution Resource Sharing

8 ML Active Stations
8 DEE Active Stations
2 DL columns
4 sharing groups
ML DEE ML DEE
ML AS AS AS

FIG. 1

AS

AS

AS

AS

AS

AS

AS

AS

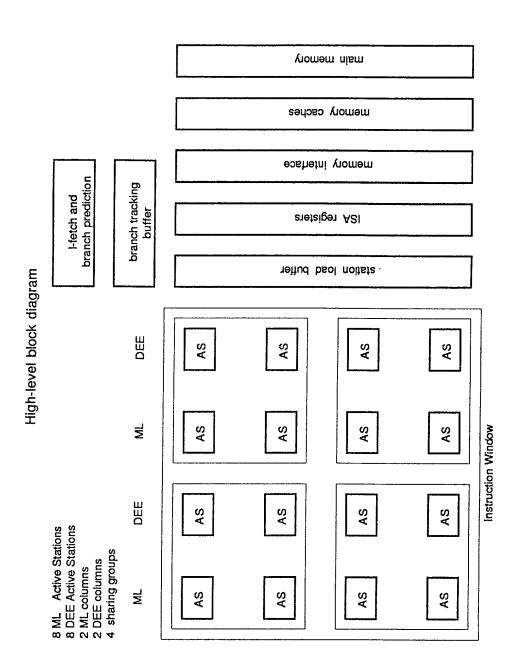
ΑS

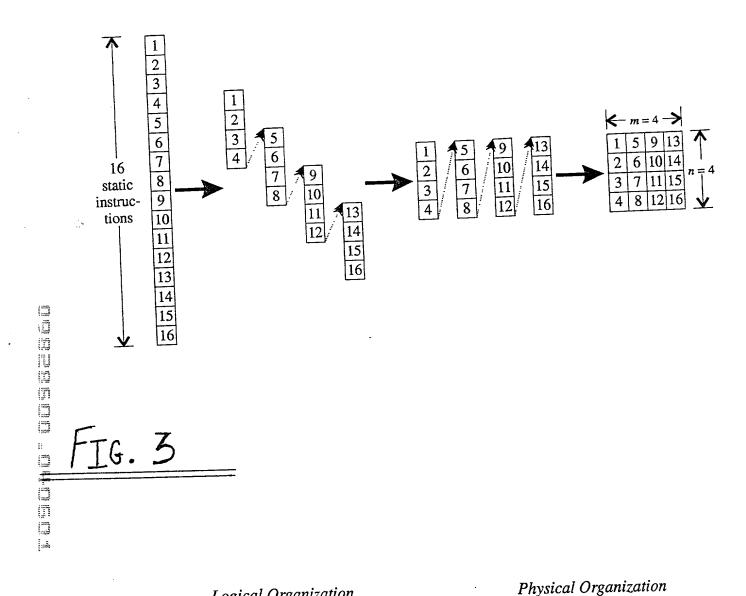
AS

AS

AS

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Logical O		Physical Organization							n		
MainLine (ML) region (path)	DEE path 1	DEE path 2		M	D <u>1</u>	M	D1	M :	D2	M :	D2
1 5 9 13	Î1 5	1 5		1	1	5	5	9	1	13	5
2 6 10 14	2 6	26		2	2	6	6	10	2	14	6
3 7 11 15	3 7	3 7		3	3	7	7_	11	3	15	7
4 8 12 16	4 8	4 8		4	4	8	8	12	4	16	8

Instruction Window (IW), with Disjoint Eager Execution (DEE)
- each square is an active station -

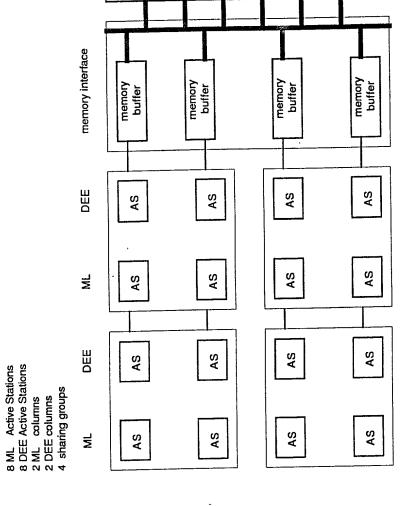
Ç,

ISA Architected Register Files

8 ML Active Stations 8 DEE Active Stations 2 ML columns 2 DEE columns 4 sharing groups

ISA register files AS DEE AS AS AS AS AS AS 될 AS AS DEE AS AS AS AS AS AS AS 뒬

Memory Interface and Buffers



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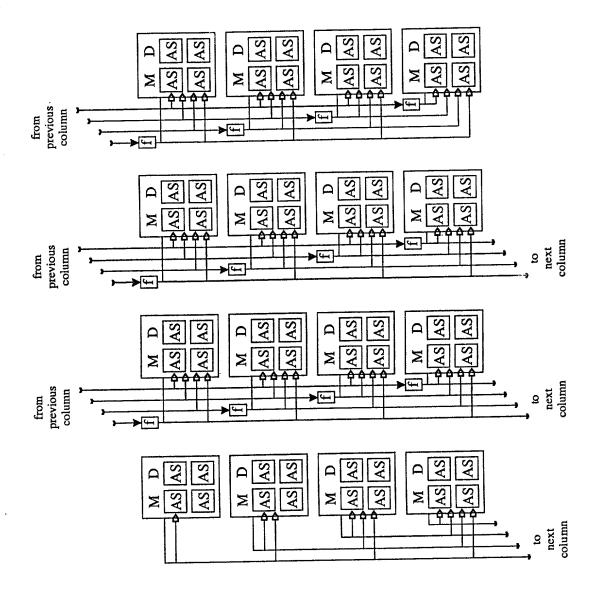
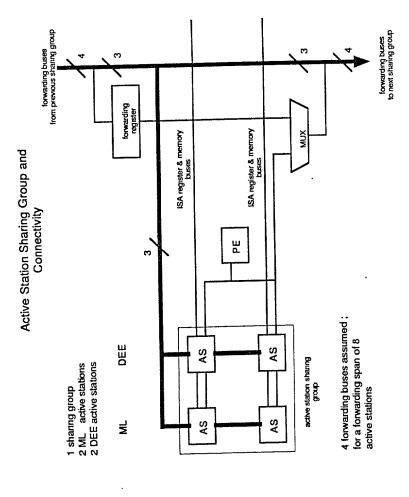


FIG. 7





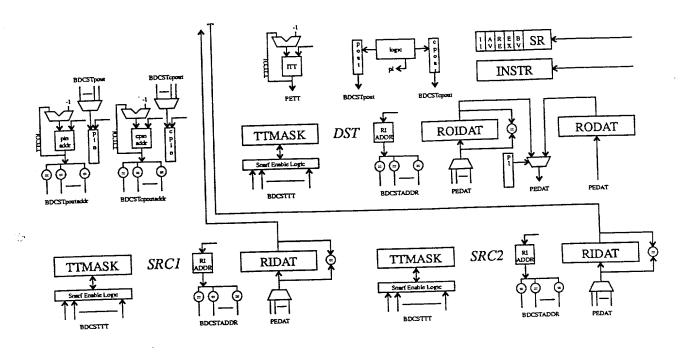
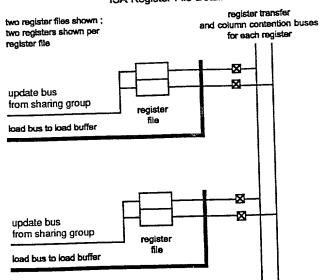


FIG. 9

ISA Register File Detail



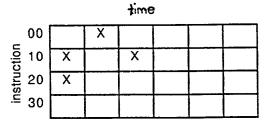
			time	€	
	X				
10 20 30	X				
Ž 20	X				
≅ 30	X	Х			

an 'X' marks an execution

FIG. 11

an 'X' marks an execution

FIG. 12

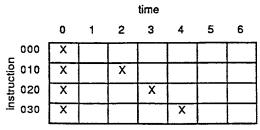


an 'X' marks an execution

FIG. 13

		time							
		0	1	2	3	4	5	6	
_	00		X				X		
instruction	10	X		Х	,			Х	
stru	20				X				
<u>.</u> Ë	30		X	Х		X			
				<u> </u>					

an 'X' marks an execution



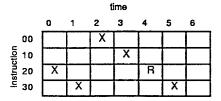
an 'X' marks an execution

FIG. 15

time 0 2 3 1 4 5 6 00 Х instruction 10 X 20 X R 30 X

an 'X' marks an execution, an 'R' marks a relay operation

FIG. 16



an 'X' marks an execution, an 'R' marks a relay operation

FI6.17

		time							
	0	1	2	3	4	5	6		
_ 00	X	T	\top	Τ	X	T	Ι.		
틀 10	X	7		1		Х			
nostruction 20 30	R	T	D		1		В		
≘ 30	X								

an 'X' marks an execution, an 'R' marks a relay operation, an 'B' marks a broadcast-only operation, a 'D' marks an execution in a DEE path